AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claims 1-36 (Canceled)

Claim 37 (Currently Amended): Biocompatible implant according to claim **[[**36**]]** 42, wherein said implant is ~~also~~ biodegradable.

Claim 38 (Currently Amended): Biocompatible implant according to claim **[[**36**]]** 42, wherein said scaffold is comprised of a synthetic, biocompatible and biodegradable material.

Claim 39 (Previously Presented): Biocompatible implant according to claim 38, wherein said scaffold is comprised of a biopolymer, bioglass, bioceramic, calcium sulfate, or calcium phosphate.

Claim 40 (Previously Presented): Biocompatible implant according to claim 38, wherein said scaffold is comprised of monocalcium phosphate monohydrate, monocalcium phosphate anhydrous, dicalcium phosphate dihydrate, dicalcium phosphate anhydrous, tetracalcium phophate, calcium orthophosphate phosphate, calcium pyrophosphate, α-tricalcium phosphate, β-tricalcium phosphate, or hydroxyapatite.

Claim 41 (Currently Amended): Biocompatible implant according to claim 38, wherein said scaffold is comprised of poly(α-hydroxyesters), poly(ortho esters), poly(ether esters), polyanhydrides, poly(phosphazenes), poly(propylene fumarates), poly(ester amides), poly(ethylene fumarates), poly(amino acids), polysaccharides, polypeptides, poly(hydroxy butyrates), poly(hydroxy valerates), polyurethanes, poly(malic acid), polylactides, polyglycolides, polycaprolactones, poly(glycolide-co-trimethylene carbonates), polydioxanones, or co-polymers, terpolymers thereof or blends thereof ~~those polymers~~, or a combination of biocompatible and biodegradable materials.

Claim 42 (Currently Amended): Biocompatible implant ~~according to claim 36~~ for the treatment of defects in a living organism such as bone defects or tooth extraction wounds, comprising at least one zone of impermeability to soft tissue and/or epithelial cells in-growth, wherein said implant is comprised of an open porous scaffold and a membrane covering at least a part of said scaffold and being sealed to it such that said scaffold and said membrane form a single piece of matter that is resorbable by an organism, wherein at least a portion of the open porous scaffold allows an in-growth of regenerating bone tissue, wherein said scaffold is comprised of fused, biocompatible, biodegradable granules selected from the group consisting of solid granules, porous granules, hollow granules, hollow granules with at least one opening in the granule, and a mixture thereof; said granules having an equivalent-diameter in a range between about 100 μm to about 2000 μm, a major portion of said granules being coated with at least one biocompatible and biodegradable layer of a polymer selected from the group consisting of poly(α-

hydroxyesters), poly(ortho esters), poly(ether esters), polyanhydrides, poly(phosphazenes), poly(propylene fumarates), poly(ester amides), poly(ethylene fumarates), poly(amino acids), polysaccharides, polypeptides, poly(hydroxy butyrates), poly(hydroxy valerates), polyurethanes, poly(malic acid), polylactides, polyglycolides, polycaprolactones, poly(glycolide-co-trimethylene carbonates), polydioxanones, and copolymers, terpolymers thereof, and blends thereof ~~those polymers~~; and said polymer coating having a thickness in a range between 1 μm to 300 μm.

Claim 43 (Currently Amended): Biocompatible implant according to claim 42, wherein said granules have ~~having~~ an equivalent-diameter in a range between about 500 μm to about 1000 μm.

Claim 44 (Previously Presented): Biocompatible implant according to claim 42, wherein said polymer coating has a thickness in a range between 5 μm to 30 μm.

Claim 45 (Previously Presented): Biocompatible implant according to claim 42, wherein said granules have a spherical shape.

Claim 46 (Currently Amended): Biocompatible implant according to claim [[36]] 42, wherein said scaffold has an open porous configuration with interconnected pores having a size in a range between about 10 μm to about 2000 μm.

Claim 47 (Previously Presented): Biocompatible implant according to claim 46, wherein said interconnected pores have a size in a range between about 100 µm to about 500 µm.

Claim 48 (Currently Amended): Biocompatible implant according to claim **[[**36**]]** 42, wherein said membrane is made of a synthetic, biocompatible and biodegradable polymer selected from the group consisting of poly(α-hydroxyesters), poly(ortho esters), poly(ether esters), polyanhydrides, poly(phosphazenes), poly(propylene fumarates), poly(ester amides), poly(ethylene fumarates), poly(amino acids), polysaccharides, polypeptides, poly(hydroxy butyrates), poly(hydroxy valerates), polyurethanes, poly(malic acid), polylactides, polyglycolides, polycaprolactones, poly(glycolide-co-trimethylene carbonates), polydioxanones, and copolymers, terpolymers thereof, and blends thereof ~~those polymers~~.

Claim 49 (Currently Amended): Biocompatible implant according to claim **[[**36**]]** 42, wherein said biodegradable membrane is a polymer film, a polymer textile, a polymer fleece, a layer of fused polymer particles or a combination thereof, thus forming at least one zone of impermeability to soft tissue and/ or epithelial cells in-growth, and having a thickness in a range between about 10 µm to about 3000 µm.

Claim 50 (Currently Amended): Biocompatible implant ~~according to claim 49,~~ for the treatment of defects in a living organism such as bone defects or tooth

extraction wounds, comprising at least one zone of impermeability to soft tissue and/or epithelial cells in-growth, wherein said implant is comprised of an open porous scaffold and a membrane covering at least a part of said scaffold and being sealed to it such that said scaffold and said membrane form a single piece of matter that is resorbable by an organism, wherein at least a portion of the open porous scaffold allows an in-growth of regenerating bone tissue, wherein said biodegradable membrane is a polymer film, a polymer textile, a polymer fleece, a layer of fused polymer particles or a combination thereof, thus forming at least one zone of impermeability to soft tissue and/or epithelial cells in-growth, and having a thickness in a range between about 10 µm to about 3000 µm, wherein said at least one zone of impermeability to soft tissue and/ or epithelial cells in-growth has a thickness in a range between about 50 µm to about 1000 µm.

Claim 51 (Currently Amended): Biocompatible implant according to claim [[36]] 42, wherein said biodegradable membrane is made of fused polymer particles.

Claim 52 (Currently Amended): Biocompatible implant ~~according to claim 51~~ for the treatment of defects in a living organism such as bone defects or tooth extraction wounds, comprising at least one zone of impermeability to soft tissue and/or epithelial cells in-growth, wherein said implant is comprised of an open porous scaffold and a membrane covering at least a part of said scaffold and being sealed to it such that said scaffold and said membrane form a single piece of matter that is resorbable by an organism, wherein at least a portion of the open porous scaffold allows an in-growth of regenerating bone tissue, wherein said biodegradable

membrane is made of fused polymer particles, wherein said fused polymer particles comprise microspheres, pellets or granules, having a size smaller than about 500 µm.

Claim 53 (Currently Amended): Biocompatible implant according to claim **[[**36**]]** 42, wherein said membrane has a configuration such as to allow a transport of fluids and/or molecules through the membrane, but forming a barrier against soft tissue and/or epithelial cells in-growth into the implant.

Claim 54 (Currently Amended): Biocompatible implant according to claim **[[**36**]]** 42, wherein at least a portion of the membrane has a porous configuration, said porosity being formed by pores having sizes in the range between about 1 µm to 500 µm.

Claim 55 (Previously Presented): Biocompatible implant according to claim 54, wherein said pores have sizes in a range between about 5 µm to 50 µm.

Claim 56 (Currently Amended): Biocompatible implant ~~according to claim 36~~ for the treatment of defects in a living organism such as bone defects or tooth extraction wounds, comprising at least one zone of impermeability to soft tissue and/or epithelial cells in-growth, wherein said implant is comprised of an open porous scaffold and a membrane covering at least a part of said scaffold and being

sealed to it such that said scaffold and said membrane form a single piece of matter that is resorbable by an organism, wherein at least a portion of the open porous scaffold allows an in-growth of regenerating bone tissue, wherein said membrane comprises at least two layers, one of said layers having a barrier function against soft tissue and/or epithelial cells in-growth in the scaffold, and a second layer, which is in direct **[[**in**]]** contact with the surrounding living organism, allowing the stabilization and anchorage of soft tissue which tends to close the wound.

Claim 57 (Currently Amended): Biocompatible implant according to claim **[[**36**]]** 42, wherein said membrane comprises at least one non-porous layer.

Claim 58 (Currently Amended): Biocompatible implant ~~according to claim 36~~ for the treatment of defects in a living organism such as bone defects or tooth extraction wounds, comprising at least one zone of impermeability to soft tissue and/or epithelial cells in-growth, wherein said implant is comprised of an open porous scaffold and a membrane covering at least a part of said scaffold and being sealed to it such that said scaffold and said membrane form a single piece of matter that is resorbable by an organism, wherein at least a portion of the open porous scaffold allows an in-growth of regenerating bone tissue, said scaffold and/or said membrane including void spaces that are at least partially filled with at least one of air or gas, polymer, liquid, gel, or solid particles.

Claim 59 (Currently Amended): Biocompatible implant according to claim [[36]] 42, further comprising at least one biologically active substance which is integrated in said scaffold and/or in said granules and/or in a coating applied to the granules or implant and/or in said membrane and/or which is encapsulated in microspheres which are loaded into said scaffold and/or into said membrane and/or within macropores between said granules.

Claim 60 (Currently Amended): Biocompatible implant according to claim [[36]] 42, further comprising at least one additive that is integrated into said scaffold and/or into said membrane.

Claim 61 (Currently Amended): Biocompatible implant ~~according to claim 60~~ for the treatment of defects in a living organism such as bone defects or tooth extraction wounds, comprising at least one zone of impermeability to soft tissue and/or epithelial cells in-growth, wherein said implant is comprised of an open porous scaffold and a membrane covering at least a part of said scaffold and being sealed to it such that said scaffold and said membrane form a single piece of matter that is resorbable by an organism, wherein at least a portion of the open porous scaffold allows an in-growth of regenerating bone tissue, further comprising at least one additive that is integrated into said scaffold and/or into said membrane, wherein said at least one additive comprises a plasticizer.

Claim 62 (Currently Amended): Biocompatible implant according to claim **[[**36**]]** 42, wherein an exposed surface of said biocompatible implant allows cell growth into the scaffold.

Claim 63 (Currently Amended): Biocompatible implant according to claim **[[**36**]]** 42, wherein said biocompatible implant is seeded with cells.

Claims 64-71 (Canceled)

Claim 72 (Currently Amended): Biocompatible implant according to claim **[[**71**]]** 74, wherein said implant is ~~also~~ biodegradable.

Claim 73 (Currently Amended): Biocompatible implant according to claim **[[**71**]]** 74, said inorganic or synthetic granules comprising at least one of biopolymers, bioglasses, bioceramics, ~~more preferably calcium sulfate, calcium phosphate such as, for example, monocalcium phosphate monohydrate, monocalcium phosphate anhydrous, dicalcium phosphate dihydrate, dicalcium phosphate anhydrous, tetracalcium phophate, calcium orthophosphate phosphate, calcium pyrophosphate, α-tricalcium phosphate, β-tricalcium phosphate, apatite such as hydroxyapatite,~~ or a polymer selected from the group consisting of ~~polymers such as, for example,~~ poly(α-hydroxyesters), poly(ortho esters), poly(ether esters), polyanhydrides, poly(phosphazenes), poly(propylene fumarates), poly(ester amides), poly(ethylene fumarates), poly(amino acids), polysaccharides, polypeptides, poly(hydroxy butyrates), poly(hydroxy valerates), polyurethanes, poly(malic acid),

polylactides, polyglycolides, polycaprolactones, poly(glycolide-co-trimethylene carbonates), polydioxanones, and **[[**or**]]** co-polymers, terpolymers thereof and **[[**or**]]** blends thereof ~~those polymers~~, or a combination of biocompatible and biodegradable materials.

Claim 74 (Currently Amended): Biocompatible implant ~~according to claim 71~~ for the treatment of defects in a living organism such as bone defects or tooth extraction wounds, comprising at least one zone of impermeability to soft tissue and/or epithelial cells in-growth, wherein said implant is made of a composite matrix and a membrane covering at least a part of said composite matrix and being sealed to it such that said composite matrix and said membrane form a single piece of matter, said composite matrix comprising a plurality of inorganic or synthetic granules bonded or held together by a synthetic polymer matrix, said inorganic or synthetic granules selected from the group consisting of solid granules, porous granules, hollow granules, hollow granules with at least one opening in the granule, and a mixture thereof; said granules having an equivalent-diameter in a range between about 100 μm to about 2000 μm.

Claim 75 (Currently Amended): Biocompatible implant according to claim **[[**71**]]** 74, said synthetic polymer matrix comprising at least one of poly(α-hydroxyesters), poly(ortho esters), poly(ether esters), polyanhydrides, poly(phosphazenes), poly(propylene fumarates), poly(ester amides), poly(ethylene fumarates), poly(amino acids), polysaccharides, polypeptides, poly(hydroxy butyrates), poly(hydroxy valerates), polyurethanes, poly(malic acid), polylactides, polyglycolides, polycaprolactones, poly(glycolide-co-trimethylene carbonates), polydioxanones, and copolymers, terpolymers thereof, and blends thereof ~~those polymers~~.

Claim 76 (Currently Amended): Biocompatible implant according to claim **[[**71**]]** 74, said composite matrix having an open porous configuration with interconnected pores having a size in a range between about 10 μm to about 2000 μm.

Claim 77 (Currently Amended): Biocompatible implant ~~according to claim 71~~ for the treatment of defects in a living organism such as bone defects or tooth extraction wounds, comprising at least one zone of impermeability to soft tissue and/or epithelial cells in-growth, wherein said implant is made of a composite matrix and a membrane covering at least a part of said composite matrix and being sealed to it such that said composite matrix and said membrane form a single piece of matter, said composite matrix comprising a plurality of inorganic or synthetic

granules bonded or held together by a synthetic polymer matrix, said composite matrix including void spaces between adjacent granules that are at least partially filled with at least one of air or gas, polymer, liquid, gel, or solid particles.

Claim 78 (Currently Amended): Biocompatible implant ~~according to claim 71~~ for the treatment of defects in a living organism such as bone defects or tooth extraction wounds, comprising at least one zone of impermeability to soft tissue and/or epithelial cells in-growth, wherein said implant is made of a composite matrix and a membrane covering at least a part of said composite matrix and being sealed to it such that said composite matrix and said membrane form a single piece of matter, said composite matrix comprising a plurality of inorganic or synthetic granules bonded or held together by a synthetic polymer matrix, said composite matrix including void spaces between adjacent granules that are filled with at least a biologically active substance.

Claim 79 (Currently Amended): Biocompatible implant ~~according to claim 71~~ for the treatment of defects in a living organism such as bone defects or tooth extraction wounds, comprising at least one zone of impermeability to soft tissue and/or epithelial cells in-growth, wherein said implant is made of a composite matrix and a membrane covering at least a part of said composite matrix and being sealed to it such that said composite matrix and said membrane form a single piece of matter, said composite matrix comprising a plurality of inorganic or synthetic granules bonded or held together by a synthetic polymer matrix, wherein said biodegradable membrane is a polymer film, a polymer textile, a polymer fleece, a

layer of fused polymer particles or a combination thereof, thus forming at least one zone of impermeability to soft tissue and/ or epithelial cells in-growth, and having a thickness of about 10 μm to about 3000 μm.

Claims 80 and 81 (Canceled)

Claim 82 (New): Biocompatible implant according to claim 73, wherein said inorganic or synthetic granules comprise calcium sulfate or calcium phosphate.

Claim 83 (New): Biocompatible implant according to claim 82, wherein said inorganic or synthetic granules comprise monocalcium phosphate monohydrate, monocalcium phosphate anhydrous, dicalcium phosphate dihydrate, dicalcium phosphate anhydrous, tetracalcium phophate, calcium orthophosphate phosphate, calcium pyrophosphate, α-tricalcium phosphate, β-tricalcium phosphate, or apatite.

Claim 84 (New): Biocompatible implant according to claim 83, wherein said inorganic or synthetic granules comprise hydroxyapatite.